

REMARKS

This request for reconsideration is being filed in response to the Office Action dated December 4, 2006. For the following reasons the application should be allowed and the case passed to issue.

Claims 1-15 are pending in this application. Claims 13 and 14 have been withdrawn pursuant to restriction requirement. Claims 1-12 and 15 are rejected.

Restriction

Applicants respectfully request the Examiner rejoin, examine, and allow method claims 13 and 14 upon the allowance of the transmission component claims.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-12 were rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Suzuki et al. (U.S. Pat. Pub. No. 2004/0079310). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

A certified English translation of Japanese Priority Document, Japanese Patent Application No. 2003-053748 is attached to this response in Appendix A. JP 2003-053748 has a filing date of February 28, 2003, which is earlier than the U.S. filing date of Suzuki et al., October 17, 2003. Thus, the rejections based on Suzuki et al. should be withdrawn.

Claims 1-12 were rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Ohki (U.S. Pat. Pub. No. 2003/0123769). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

Declarations under 37 C.F.R. § 1.132 executed by Chikara Ohki, Kouichi Okugami, Yoshinori Muramatsu, and Michio Hori are attached to this response in Appendices B, C, D, and

E, respectively. In the declarations, the inventors affirm that Chikara Ohki is the sole inventor of the specified subject matter that was disclosed, but not claimed in U.S. Patent Application Serial No. 10/300,590 filed November 21, 2002. Thus, the rejections based on Ohki should be withdrawn.

Claims 1-8 were rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Takemura et al. (U.S. Pat. No. 6,224,688). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The Examiner asserted that Takemura et al. ('688) disclose a rolling bearing having a nitrided layer with a grain size exceeding 10. As regards claims 5-8, the Examiner asserted that the fracture stress was an inherent characteristic.

An aspect of the invention, per claim 1, is a transmission component incorporated into a transmission capable of changing a rotational speed of an output shaft relative to a rotational speed of an input shaft by means of mesh of toothed wheels. The component has a nitriding layer formed by a carbonitriding process at a surface layer, and an austenite grain with a grain size number falling within a range exceeding 10

Another aspect of the invention, per claim 5, is a transmission component incorporated into a transmission capable of changing a rotational speed of an output shaft relative to a rotational speed of an input shaft by means of mesh of toothed wheels. The component has a nitriding layer formed by a carbonitriding process at a surface layer, and a fracture stress value of at least 2650 MPa.

Takemura et al. ('688) do not anticipate the claimed transmission component because Takemura et al. ('688) do not disclose the component has a nitriding layer at a surface layer, as required by claims 1 and 5. Takemura et al. ('688) teach that prior processes of carbonitriding

by heat treatment "**costs a great deal**" (column 2, lines 29-40). Rather, Takemura et al. ('688) disclose adding 0.05 to 0.40 % by weight of at least one of Ti, Nb, and Al to disperse a matrix and provide smaller austenite crystal grains (column 5, lines 29-40) **without the costly process of carbonitriding by heat treating**.

Claim 5 is further distinguishable over Takemura et al. ('688), as Takemura et al. ('688) do not disclose a fracture stress value of at least 2650 MPa. Contrary to the Examiner's assertion that the fracture stress is an inherent value, the data in Table 1 of the present specification clearly shows that the claimed fracture stress is not an inherent value. The claimed fracture stress value is achieved because of specific heat treating processes applied during the carbonitriding process, such as the heat treatment process illustrated in Fig. 3. If a different carbonitriding and heat treatment process is applied different fracture stress values are obtained, as indicated in Table 1. As shown in Table 1, conventionally carbonitrided products have a fracture stress value of 2330 MPa, which is **less** than the claimed at least 2650 MPa. Clearly, the claimed fracture stress value is **not inherent**. Furthermore, the claimed carbonitriding is contrary to the teachings of Takemura et al., as explained above.

The Examiner has not provided a factual basis to support the allegations that the material of Takemura et al. ('688) would inherently have the fracture stress value required by claim 5. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). "Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51

(Fed. Cir. 1999)(citations omitted). Rather, Applicants have shown that the fracture stress value is not an inherent value of the material.

Claims 9-12 were rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Takemura et al. (U.S. Pat. No. 6,440,232). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

An aspect of the invention, per claim 9, is a transmission component incorporated into a transmission capable of changing a rotational speed of an output shaft relative to a rotational speed of an input shaft by means of mesh of toothed wheels. The component has a nitriding layer formed by a carbonitriding process at a surface layer, and a hydrogen content of at most 0.5 ppm.

The Examiner asserted that Takemura et al. ('232) disclose a rolling bearing having a nitrided layer and a hydrogen content of at most 0.5 ppm.

Takemura et al. ('232) do not anticipate the claimed transmission component because Takemura et al. ('232) do not disclose a transmission component incorporated into a transmission capable of changing a rotational speed of an output shaft relative to a rotational speed of an input shaft by means of mesh of toothed wheels, as required by claim 9. Rather, Takemura et al. teach a toroidal type transmission having a transmission ratio determined by how the power roller bearing 11 tilts (abstract, column 1, lines 34-41 and column 3, line 53 to column 4, line 22).

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v.*

Custom Metalcraft, Inc., 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Takemura et al. ('688) do not disclose a nitriding layer formed by a carbonitriding process at a surface layer, as required by claims 1 and 5, and a fracture stress value of at least 2650 MPa; and Takemura et al. ('232) do not disclose a transmission component incorporated into a transmission capable of changing a rotational speed of an output shaft relative to a rotational speed of an input shaft by means of mesh of toothed wheels, as required by claim 9, Takemura et al. ('688) and Takemura et al. ('232) do not anticipate claims 1 and 5, and 9, respectively.

Applicants further submit that Takemura et al. ('688) and ('232), whether taken alone, or in combination, do not suggest the claimed transmission component.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-12 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki et al. in view of Maeda et al. (U.S. Patent No. 6,423,158). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

As explained above, with the filing of the certified English translation of JP 2003-053748 Suzuki et al. should be withdrawn as a prior art reference. The instant claims are further allowable over combinations of Suzuki et al. and Maeda et al. because Suzuki et al. do not qualify as a prior art reference under 35 U.S.C. § 103(c). Suzuki et al. was cited as prior art via 35 U.S.C. § 102(e) because it has an earlier filing date than the instant application and was copending with the instant application. The instant application and Suzuki et al. were, at the time the instant invention was made, owned by the same person (NTN Corporation) or subject to

an obligation of assignment to the same person. Ergo, by virtue of 35 U.S.C. §103(c), Suzuki et al. may not be relied upon to support a rejection under 35 U.S.C. §103. (*See* MPEP § 706.02(I)(2)(II)).

Claims 1-12 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohki in view of Maeda et al. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

As explained above, with the filing of the Declarations Under 37 C.F.R. § 1.132 of the inventors Ohki should be withdrawn as a prior art reference. The instant claims are further allowable over combinations of Ohki and Maeda et al. because Ohki does not qualify as a prior art reference under 35 U.S.C. § 103(c). Ohki was cited as prior art via 35 U.S.C. § 102(e) because it has an earlier filing date than the instant application and was copending with the instant application. The instant application and Ohki were, at the time the instant invention was made, owned by the same person (NTN Corporation) or subject to an obligation of assignment to the same person. Ergo, by virtue of 35 U.S.C. §103(c), Ohki et al. may not be relied upon to support a rejection under 35 U.S.C. §103. (*See* MPEP § 706.02(I)(2)(II)).

Claims 1-8 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takemura et al. ('688) in view of Maeda et al. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

An aspect of the invention, per claim 15, is a tapered roller bearing having an inner ring, an outer ring, and a tapered roller. At least any one of the inner ring, the outer ring and the tapered roller has a nitriding layer formed by a carbonitriding process and an austenite grain with a grain size number falling within a range exceeding 10.

Takemura et al. ('688) and Maeda et al., whether taken in combination, or taken alone, do not suggest the claimed transmission component because Maeda et al. do not cure the deficiencies of Takemura et al. ('688). Maeda et al. do not suggest a nitriding layer formed by a carbonitriding process, as required by claims 1, 5, 9, and 15; and a fracture stress value of at least 2650 MPa, as required by claim 5.

The dependent claims are allowable for at least the same reasons as the respective dependent claims from which they depend and further distinguish the claimed invention.

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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